I. AMENDMENT OF THE CLAIMS

1-15. (Canceled)

16. (Previously presented) A method of killing a B cell lymphoma cell in a subject comprising administering a therapeutically effective amount of an immunoconjugate to the subject,

wherein said immunoconjugate comprises an anti-CD20 antibody or an immunogenic fragment thereof that binds to CD20 expressed by a B cell lymphoma cell in the subject, and

wherein said anti-CD20 antibody or immunogenic fragment thereof possesses human effector function, and is fused at its carboxy terminus to interferon-α-2a (IFN-α-2a) that binds a receptor expressed on the surface of an effector cell.

17-22. (Canceled)

23. (Previously Presented) The method of claim 16, wherein the effector cell is a cell which expresses an IFN-α-2a receptor selected from the groups consisting of natural killer (NK) cells, lymphocyte-activated killer (LAK) cells, macrophages, monocytes, and polymorphonuclear (PMN) cells.

24. (Previously Presented) The method of claim 16, wherein said immunoconjugate facilitates extracellular (ADCC-type) and/or intracellular (phagocytic) killing of target cell.

25. (Previously Presented) The method of claim 16, wherein said immunoconjugate comprises an anti-CD20 antibody or an immunogenic fragment thereof selected from the group consisting of rituximab, 1F5, ibritumomab, 1H4 single chain Fv antibody, and tositumomab antibody.

26. (Previously Presented) The method of claim 16, wherein the immunogenic fragment is selected from the group consisting of a single variable region of the anti-CD20 antibody VL or VH, two or more variable regions, domain deleted antibody and minibodies, Fab, Fab1, Fab2, SFV, and single chain antibodies.

27. (Previously Presented) The method of claim 16, wherein the anti-CD20 antibody or immunogenic fragment is a humanized or chimeric antibody.

28. Previously Presented) The method of claim 16, wherein the immunoconjugate is administered to the subject by intravenous injection.

29. (Previously Presented) A method of treating B cell lymphoma in a subject comprising administering a therapeutically effective amount of a fusion protein to a subject,

wherein said fusion protein comprises an anti-CD20 antibody or an immunogenic fragment thereof that binds to CD20 expressed by a B cell lymphoma cell in the subject; and

wherein said anti-CD20 antibody or immunogenic fragment thereof possesses human effector function and is fused at its carboxy terminus to interferon-α-2a (IFN-α-2a) that binds a receptor for IFN-α-2a that is expressed on the surface of an effector cell.

30. (Previously Presented) The method of claim 29, wherein the effector cell is selected from the group consisting of natural killer (NK) cell, lymphocyte-activated killer (LAK) cell, macrophage, monocyte, and polymorphonuclear (PMN) cells.

31. (Previously Presented) The method of claim 29, wherein the anti-CD20 antibody is rituximab.

32. (Previously Presented) The method of claim 29, wherein the anti-CD20 antibody is1F5.

33. (Previously Presented) The method of claim 29, wherein the anti-CD20 antibody is ibritumomab.

34. (Previously Presented) The method of claim 29, wherein the anti-CD20 antibody is 1H4 single chain Fv antibody.

35. (Previously Presented) The method of claim 29, wherein the anti-CD20 antibody is tositumomab.

36. (Previously Presented) The method of claim 29, wherein the fusion protein is administered to the subject by intravenous injection.